

Claims

1. A scrubber for the cleaning of gases containing several scrubber stages (1-4), where the scrubber stages are arranged
5 in a scrubber tower with the different stages at different levels above each other in the scrubber tower, characterised in that at least one of the scrubber stages (2-4) above the lowest scrubber stage (1) comprises a ring-shaped tank (10, 15, 20) arranged inside the
10 scrubber tower, which ring-shaped tank (10, 15, 20) is arranged surrounding a central channel (9, 14, 19) through which the gas that is to be cleaned can pass upwards.

2. The scrubber according to claim 1,
15 characterised in that all scrubber stages (2-4) above the lowest scrubber stage (1) comprise a ring-shaped tank (10, 15, 20) located inside of the scrubber tower.

3. The scrubber according to claim 1 or 2,
20 characterised in that at each stage (1-4) of the scrubber a circulation pump (27, 30, 34) is arranged to feed through feed pipes (29, 33, 37) fluid present in the tank from the tank (7, 10, 15, 20) at the bottom of the scrubber stage to spray beams (8, 13, 18, 23) arranged at the upper
25 part of the scrubber stage (1-4) for distribution over the cross-section of the scrubber in a direction against the upwards gas flow.

4. The scrubber according to claim 3,
30 characterised in that at the bottom of each stage of the scrubber (2-4) above the lowest a separation trough (11, 16, 21) is arranged separating the scrubber fluid from the upwards flowing gas, and leading the scrubber fluid to the ring-shaped tank (10, 15, 20).

5. The scrubber according to claim 4, characterised in that the separation trough (11, 16, 21) comprises obliquely placed laminae (25) leading
5 scrubber fluid that arrives from above to trough channels (26) arranged under the laminae, which channels lead the scrubber fluid onwards to the ring-shaped tanks.

6. The scrubber according to any one of claims 3-5,
10 characterised in that the circulation pump (27, 30) is arranged connected to the ring-shaped tank and located at essentially the same level as the tank.

7. The scrubber according to claim 6,
15 characterised in that the circulation pump (30) is arranged outside of the ring-shaped tank (15) and outside of the scrubber tower, and connected by means of an inlet pipe (32) to a connection (17) on the tank (15).

8. The scrubber according to claim 6,
20 characterised in that a pump tank (28) is arranged outside of the ring-shaped tank (10) and outside of the scrubber tower directly connected to the tank (10) through a connection (12), and that the circulation pump (27)
25 is arranged in or connected to the pump tank (28).

9. The scrubber according to any one of claims 3-5, characterised in that the circulation pump (34)
is arranged on the ground outside of the ring-shaped tank
30 (15) and outside of the scrubber tower, and connected by means of an inlet pipe (36) to a connector (17) on the tank (15).

10. The scrubber according to any one of the preceding claims, characterised in that the feed pipe (29, 37) for feeding the scrubber fluid to the nozzle beams (8, 13, 18, 23) is located inside the outer surface (5) of
5 the scrubber tower.